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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/534,738

05/12/2005

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EXAMINER

DUONG, DIEU HIEN

ART UNIT

PAPER NUMBER

2821

MAIL DATE

DELIVERY MODE

07/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/534,738	<b>Applicant(s)</b> BROOKS ET AL.	
	<b>Examiner</b> DIEU HIEN T. DUONG	<b>Art Unit</b> 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 24 is/are pending in the application.
- 4a) Of the above claim(s) 15, 16, 19 and 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 17, 18, 20 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05/24/2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/27/05, 05/12/05</u>  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Election/Restrictions***

1. In response to applicants election/restrictions filed on 04/17/2008. Applicant elected species I, claims 1-18, 20, 21 and 24. However, there are more than one species in the elected species I. Therefore, examiner elects claims 1-14, 17-18 and 20-21 which are closest to the claimed invention. Accordingly, claims 15-16, 19 and 24 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b).

Upon the allowance of generic claims 1 and 14, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

### ***Priority***

2. Acknowledgement is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

### ***Information Disclosure Statement***

3. The information disclosure statements (IDS) submitted on 07/27/2005 and 05/12/2005 in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is considered by the examiner.

If applicant is aware of any prior art or any other co-pending application not already of record, he/she is reminded of his/her duty under 37 CFR 1.97 to disclose the same.

### ***Claim Objections***

4. Claims 3-14 are objected to because of the following informalities:

Claims 3-14, line 1, "An" should be changed to - -The- -;

Appropriate correction is required.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations as set forth below must be shown or the features canceled from the claims:

"stowed position" (claim 1)

"four single-axis hingedly-connected joints" (claim 4)

"an articulated stepper motor harmonic drive unit" (claim 5)

"spring-operated mechanical hinge" (claim 6)

"antenna pointing means" (claim 7)

"2-axis antenna pointing mechanism" (claim 8)

"metal bracket means" (claim 11)

"a plurality of hold-down points" (claim 13)

"a plurality of predetermined directions" (claim 14)

No new matter should be entered. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be

removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-14, 17-18 and 20-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 3, the recitation "wherein the support arm includes a **dog-leg** for permitting stowage of the reflector in said first stowed position", in lines 2-3, is unclear. It is not clear what the term "dog-leg" refers to.

Regarding claim 4, the recitation "single-axis hingedly-connected joints", in lines 2-3, is unclear. It is not clear what the "four single-axis hingedly-connected joints" refers to. What is the difference between "**hingedly-connected joints**" and "**four single-axis hingedly-connected joints**"?

Regarding claim 7, the recitation "antenna pointing means" is unclear. It is not clear what the "antenna pointing means" is since there is no illustration in drawing.

Regarding claim 8, the recitation "wherein the antenna pointing means relies upon application of a 2-axis antenna pointing means", in lines 1-3, is unclear. It is not clear how the antenna pointing means relies upon application of a 2-axis antenna pointing means since examiner can not determine what are "the antenna pointing means" and "2-axis antenna pointing mechanism" and how they are different since they are not illustrated in drawing.

Regarding claim 9, the recitation "2-axis antenna pointing mechanism functions are separately mounted on the support arm and the reflector" in lines 2-3, is unclear. It is not clear what the phrase "2-axis antenna pointing mechanism functions" refers to. What is the difference between the "2-axis antenna pointing mechanism" (claim 8) and "2-axis antenna pointing mechanism functions"?

Regarding claim 12, line 3, there is insufficient antecedent basis for the limitation "the spacecraft" in the claim.

Regarding claim 13, line 3, there is insufficient antecedent basis for the limitation "the spacecraft vehicle" in the claim.

Regarding claim 14, line 4, there is insufficient antecedent basis for the limitation "the spacecraft structure" in the claim.

The deficiencies found in line 1 of claims 17-18 are required similar clarifications to claim 15.

Claims 20-21 are rejected since it is dependent on indefinite claim 14.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Nguyen et al. (US 6,124,835 of record), hereinafter “Nguyen”

Regarding claims 1-2, as best understood, Nguyen discloses, in Figures 1-3, an articulated boom connection to a spacecraft vehicle comprising a support arm (12, 30, 32) defining a number of hingedly-connected joints (28, 34), the arm being (30, 32) adapted and arranged to carry an antenna reflector (40) so that in use, the reflector (40) can move between a first stowed position in which the reflector is nested within a predetermined volume of a spacecraft and a second deployed position in which the reflector is deployed in space.

Regarding claim 3, as applied to claim 2, Hung discloses, in Figures 1-3, wherein the support arm (12, 30, 32) includes a dog-leg for permitting stowage of the reflector in said first stowed position, the dog-leg being adapted to permit the support arm of the boom to be positioned at the circumference of the reflector when in the stowed position.

Regarding claim 4, as applied to claim 1, Hung discloses, in Figures 1-3, wherein there are four single-axis hingedly-connected joints (28, 34).

**Note:** comment prior art or merits of allowance toward claims 5-14, 17-18 and 20-21 will be provided upon applicant reply to this office action.

***Inquiry***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIEU HIEN T. DUONG whose telephone number is (571)272-8980. The examiner can normally be reached on Monday - Friday, from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Trinh Vo Dinh/



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